Vol. 24, pp. 1–121

CONTENTS

JANUARY 1990

2 **M-J. Pindera, C. T. Herakovich, W. Becker and J. Aboudi**

Nonlinear Response of Unidirectional Boron/Aluminum

22 **Raju Davé**

A Unified Approach to Modeling Resin Flow During Composite Processing

42 **Doron Shalev and K. L. Reifsnider**

Study of the Onset of Delamination at Holes in Composite Laminates

72 **A. G. Mamalis, D. E. Manolakos and G. L. Viegelahn**

Crashworthy Behaviour of Thin-Walled Tubes of Fibreglass Composite Materials Subjected to Axial Loading

92 **Wayne C. Tucker, Richard Brown and Laureen Russell**

Corrosion Between a Graphite/Polymer Composite and Metals

103 **T. Weng, A. Hiltner and E. Baer**

Damage Analysis in Reinforced LCP Composites by Acoustic Emission Location Techniques

Vol. 24, pp. 123–234

CONTENTS

FEBRUARY 1990

124 Hironori Maikuma, John W. Gillespie, Jr. and Dick J. Wilkins

Mode II Interlaminar Fracture of the Center Notch Flexural Specimen under Impact Loading

150 Bruce J. Andersen and Jonathan S. Colton

Automation of Thermoplastic Composite Processing

175 A. Lustiger and G. M. Newaz

Interlamellar Fracture and Craze Growth in PEEK Composites under Cyclic Loading

188 D. G. Liaw and T. Y. Yang

Symmetric and Asymmetric Dynamic Buckling of Laminated Thin Shells with the Effect of Imperfection and Damping

208 D. J. Boll, R. M. Jensen, L. Cordner and W. D. Bascom

Compression Behavior of Single Carbon Filaments Embedded in an Epoxy Polymer

220 A. K. De and K. K. Phani

Gauge Length Effect on the Strength of Silicon Carbide and Sapphire Filaments

Vol. 24, pp. 235–344

CONTENTS

MARCH 1990

236 **M. N. Ghasemi Nejhad and Tsu-Wei Chou**

A Model for the Prediction of Compressive Strength Reduction of Composite Laminates with Molded-In Holes

256 **Donald F. Adams and Larry G. Adams**

Tensile Impact Tests of AS4/3501-6 and S2/3501-6 Unidirectional Composites and the 3501-6 Epoxy Matrix

269 **S. R. Frost**

An Approximate Theory for Predicting the Moduli of Uni-Directional Laminates with Non-Linear Stress/Strain Behavior

293 **Stephen F. Duffy and Steven M. Arnold**

Noninteractive Macroscopic Reliability Model for Whisker-Reinforced Ceramic Composites

309 **D. Y. Paithankar, A. S. Sangani and G. C. Martin**

Effect of Nonuniformities in Temperature on Resin Flow during the Lamination of Polymer Composites

326 **H. Lau, K. Jiang and R. E. Rowlands**

Fracture Behavior of Extren at Room Temperature and 77 K

Vol. 24, pp. 345–453

CONTENTS

APRIL 1990

346 **Alan K. Miller, Micha Gur, Ady Peled, Alexander Payne and Erik Menzel**

Die-Less Forming of Thermoplastic-Matrix, Continuous-Fiber Composites

382 **A. K. Mukhopadhyay and R. L. Sierakowski**

On Sandwich Beams with Laminate Facings and Honeycomb Cores Subjected to Hygrothermal Loads: Part I—Analysis

401 **A. K. Mukhopadhyay and R. L. Sierakowski**

On Sandwich Beams with Laminate Facings and Honeycomb Cores Subjected to Hygrothermal Loads: Part II—Application

419 **S. Lee and M. Munro**

Evaluation of Testing Techniques for the Iosipescu Shear Test for Advanced Composite Materials

442 **R. F. Gibson, S. J. Hwang and C. H. Sheppard**

Characterization of Creep in Polymer Composites by the Use of Frequency-Time Transformations

Vol. 24, pp. 455–570

CONTENTS

MAY 1990

456 **Ingvar Eriksson and Carl-Gustaf Aronsson**

Strength of Tensile Loaded Graphite/Epoxy Laminates Containing Cracks, Open and Filled Holes

483 **T. K. Tsotsis and Y. Weitsman**

Energy Release Rates for Cracks Caused by Moisture Absorption in Graphite/Epoxy Composites

497 **Joon-Hyung Byun, John W. Gillespie, Jr. and Tsu-Wei Chou**

Mode I Delamination of a Three-Dimensional Fabric Composite

519 **Hisao Fukunaga**

On Isotropic Laminate Configurations

536 **C. Soutis and N. A. Fleck**

Static Compression Failure of Carbon Fibre T800/924C Composite Plate with a Single Hole

559 **Y. Qian, S. R. Swanson, R. J. Nuismer and R. B. Bucinell**

An Experimental Study of Scaling Rules for Impact Damage in Fiber Composites

Vol. 24, pp. 571–686

CONTENTS

JUNE 1990

572 **Mei-Chien Lu and Chun-Hway Hsueh**

Effects of Friction in Ceramic Coating/Fiber Composites

594 **P. H. Thornton**

The Crush Behavior of Pultruded Tubes at High Strain Rates

616 **T. J. Chapman, J. W. Gillespie, Jr., R. B. Pipes, J-A. E. Manson and J. C. Seferis**

Prediction of Process-Induced Residual Stresses in Thermoplastic Composites

644 **R. A. Shenoi and F. L. M. Violette**

A Study of Structural Composite Tee Joints in Small Boats

667 **T. P. Gabb, J. Gayda and R. A. MacKay**

Isothermal and Nonisothermal Fatigue Behavior of a Metal Matrix Composite

Vol. 24, pp. 687–794

CONTENTS

JULY 1990

688 **M. Veidt and M. Sayir**

Experimental Evaluation of Global Composite Laminate Stiffnesses by Structural Wave Propagation

707 **Michael R. Wisnom**

Factors Affecting the Transverse Tensile Strength of Unidirectional Continuous Silicon Carbide Fibre Reinforced 6061 Aluminum

727 **Forrest E. Sloan and Richard J. Seymour**

Environmental Testing Using a Compliant Load-Frame

739 **Leroy Chiao and Richard E. Lyon**

A Fundamental Approach to Resin Cure Kinetics

753 **J. N. Yang, D. L. Jones, S. H. Yang and A. Meskini**

A Stiffness Degradation Model for Graphite/Epoxy Laminates

770 **Nikos Tsangarakis and Marc S. Pepi**

Biaxial Flexing of a Fiber Reinforced Aluminum Composite

786 **Antti Pramila**

Extrema and Zeros of Coefficients of Thermal Expansion of a Balanced Symmetric Laminate

Vol. 24, pp. 795–891

CONTENTS

AUGUST 1990

796 **Richard M. Christensen**

Tensor Transformations and Failure Criteria for the Analysis of Fiber Composite Materials Part II: Necessary and Sufficient Conditions for Laminate Failure

801 **Fu-Kuo Chang, Jose Luis Perez and Kuo-Yen Chang**

Analysis of Thick Laminated Composites

823 **Ming-Hwa R. Jen, J. M. Hsu and D. G. Hwang**

Fatigue Degradation in Centrally Notched Quasi-Isotropic Laminates

838 **N. K. Naik, P. S. Shembekar and M. K. Verma**

On the Influence of Stacking Sequence on Notch Sensitivity of Fabric Laminates

853 **L. N. Hjellming and J. S. Walker**

Motion of Continuous Fibers through a Newtonian Resin for High Fiber Volume Fraction

879 **A. Horoschenkoff**

Characterization of the Creep Compliances J_{22} and J_{66} of Orthotropic Composites with PEEK and Epoxy Matrices Using the Nonlinear Viscoelastic Response of the Neat Resins

Vol. 24, pp. 893–1009

CONTENTS

SEPTEMBER 1990

894 **F. A. R. Al-Salehi, S. T. S. Al-Hassani, N. M. Bastaki and M. J. Hinton**

Rate Effects on Aramid Fibre/Epoxy (KRP) Tubes Under Hoop Loading

918 **S. Hashemi, A. J. Kinloch and J. G. Williams**

The Effects of Geometry, Rate and Temperature on the Mode I, Mode II and Mixed-Mode I/II Interlaminar Fracture of Carbon-Fibre/Poly(ether-ether ketone) Composites

957 **Z. L. Gu and Jianfeng Chen**

Prediction of Notched Strength of 3D Carbon Carbon Materials Under Tension with Large Off-Axis Angle, Part I

968 **Z. L. Gu and Peiguang Liu**

Prediction of Notched Strength of 3D Carbon Carbon Materials Under Tension with Small Off-Axis Angle, Part II

977 **C. T. Sun and W. C. Liao**

Analysis of Thick Section Composite Laminates Using Effective Moduli

994 **John Z. Wang, David A. Dillard, Michael P. Wolcott, Frederick A. Kamke and Garth L. Wilkes**

Transient Moisture Effects in Fibers and Composite Materials

Vol. 24, pp. 1011–1121

CONTENTS

OCTOBER 1990

1012 Nak-Sam Choi and Kiyoshi Takahashi

Characteristics of Acoustic Emission Wave Attenuation in Short Fiber Reinforced Plastics

1029 C. T. Sun, J. L. Chen, G. T. Sha and W. E. Koop

Mechanical Characterization of SCS-6/Ti-6-4 Metal Matrix Composite

1060 R. D. Schueller and F. E. Wawner

The Effects of Hot Rolling on AA2124 15 v/o SiC Whisker Composites

1077 Michael J. Czaplicki, Richard E. Robertson and Peter H. Thornton

Non-Axial Crushing of E-Glass/Polyester Pultruded Tubes

1101 M. Y. Tsai and J. Morton

Stress and Failure Analysis of a Pin-Loaded Composite Plate: An Experimental Study

Vol. 24, pp. 1123–1243

CONTENTS

NOVEMBER 1990

1124 B. D. Davidson

An Analytical Investigation of Delamination Front Curvature in Double Cantilever Beam Specimens

1138 I. Gilath, S. Eliezer and S. Shkolnik

Spall Behaviour of Carbon Epoxy Unidirectional Composites as Compared to Aluminum and Iron

1152 Tatjana B. Stecenko and Momcilo M. Stevanovic

Variation of Elastic Moduli with Strain in Carbon/Epoxy Laminates

1159 Charles E. Anderson, Jr., Padraic E. O'Donoghue and Debra Skerhut

A Mixture Theory Approach for the Shock Response of Composite Materials

1179 H. J. Lin and Y. J. Lee

Impact-Induced Fracture in Laminated Plates and Shells

1200 S. M. Lee

Failure Mechanisms of Edge Delamination of Composites

1213 Vasilios Peros

Thick-Walled Composite Material Pressure Hulls: Three-Dimensional Laminate Analysis Considerations

1225 J.-W. Lee and I. M. Daniel

Progressive Transverse Cracking of Crossply Composite Laminates

Vol. 24, pp. 1245–1371

CONTENTS

DECEMBER 1990

1246 **Ingvar Eriksson**
On the Bearing Strength of Bolted Graphite/Epoxy Laminates

1270 **Soo-Yong Lee and George S. Springer**
Filament Winding Cylinders: I. Process Model

1299 **Emilio P. Calius, Soo-Yong Lee and George S. Springer**
Filament Winding Cylinders: II. Validation of the Process Model

1344 **Soo-Yong Lee and George S. Springer**
Filament Winding Cylinders: III. Selection of the Process Variables

1367 **Subject Index**
Author Index